

## COLLECTING HIBERNATING GROUND BEETLES IN STUMPS (COLEOPTERA: CARABIDAE)

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### ABSTRACT

Five hundred eighty ground beetles, representing 19 species, were collected from tree stumps in November at St. Redempteur, Quebec.

A large majority of the species of Carabidae apparently hibernate as adults. On the cold afternoon of November 16, 1969, I collected many ground beetles in rotten tree stumps of a woodland swamp at Saint-Redempteur, Vaudreuil County, Quebec. In a few hours, I captured 580 motionless specimens of 19 species. A few species appeared to be gregarious in hibernation: *Agonum decentis* Say, *A. gratiosum* Mannerheim, and *A. puncticeps* Csy. Some species seem to favor superficial cover; the following were taken under bark of stumps: *A. gratiosum* Mannh., *A. puncticeps* Csy., *Bembidion muscicola* Hayward, *Lebia atriventris* Say, and *L. fuscata* Dejean.

The total list follows, with the numbers of each species in parentheses: *Agonum decentis* Say (88), *A. gratiosum* Mannerheim (335), *A. melanarium* Dejean (2), *A. placidum* Say (2), *A. puncticeps* Csy. (49), *A. retracatum* LeConte (14), *A. sordens* Kirby (1), *Bembidion muscicola* Hayward (3), *Calathus gregarius* Say (1), *Lebia atriventris* Say (1), *L. fuscata* Dejean (1), *Loricera pilicornis* Fab. (3), *Olisthopus parmatus* Say (1), *Pterostichus coracinus* Newman (1), *P. luctuosus* Dejean (55), *P. lucublandus* Say (1), *P. patruelis* Dejean (5) *P. pensylvanicus* LeConte (16), *Sphaeroderus lecontei* Dejean (1).

## WING-DIMORPHISM IN *CALATHUS INGRATUS* DEJEAN (COLEOPTERA: CARABIDAE)

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The hind-wings of this species are normally very reduced but 3 fully-winged specimens were seen from Alaska by Lindroth (1966, Ground-beetles of Canada and Alaska, 4:409-648). I have examined 481 specimens of this species from Quebec and found 12 fully-winged specimens from the following localities: Gaspé-Ouest Co., Rivière-la-Madeleine, 25-VII-70 (1 female); Iles de la Madeleine Co., Ile du Havre Aubert, 3-VIII-70 (1 female); Mistassini Territory, Fort Rupert, 18-VII-68 (1 female, 1 male); Nouveau-Quebec Territory, Poste-de-la-Baleine, 24-VII-68 (1 female) and Schefferville, 21-VII-71 (3 females, 2 males); Saguenay Co., Moisie, 19-VI-71 (1 female) and Sept-Iles, 19-VII-71 (1 female). In Quebec, the long-winged forms of *Calathus ingratus* Dejean are rare and not geographically restricted. They occur in the same populations as short-winged forms, in both sexes, and they are undoubtedly functional.